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EXAMINER

DURNFORD GESZVAIN, DILLON

ART UNIT PAPER NUMBER

2622

DATE MAILED: 04/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/033,316	Applicant(s) AMLING ET AL.	
	Examiner Dillon Durnford-Geszvain	Art Unit 2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Claims **1-41** are pending, claims **1, 15** and **34** have been amended and claims **41-48** have been canceled.

Response to Arguments

2. Applicant's arguments with respect to claims **1, 15** and **34** have been considered but are moot in view of the new ground(s) of rejection.

3. Applicant's arguments regarding claim **24**, filed 1/20/2006 have been fully considered but they are not persuasive. Applicant alleges on page 17 in the second paragraph that "Yokoyama teaches that the analog image signal must be input ... into phase control unit 5." However, Column 5 lines 39-47 of Yokoyama teach that the signals CLK and HD are input from the switch 3 in the camera head 9 into the phase controller 5. Yokoyama nowhere teaches that the CCD signal must be input into the phase controller 5. Further all of the other signals on the cable 8 appear to be digital signals (see Figs. 3 and 4). Therefore, the cable would already be transmitting both analog and digital signals. If one were to move the A/D 69 to the camera head 9 it would, in fact, simplify the system of Yokoyama as only digital signals would need to be transmitted over the cable 8.

As to Applicant's arguments on page 18, the motivation for combining does not

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need to be included in the prior art but can come, instead, "in the knowledge generally available to one of ordinary skill in the art." The Examiner believes that one of ordinary skill in the art would certainly know that digital signals are more resistant to noise than an analog signal.

Claim Objections

4. Claims **5, 6, 21** and **22** are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The Examiner interprets "said camera control unit programmed based at least in part upon said timing signal particular to said camera head" of claims **1** and **15** as containing all of the limitations of the dependent claims in question. As to claims **5** and **21**, "inputted data formats the camera control unit" amounts to the control unit being programmed based on a timing signal. As to claims **6** and **22**, the timing signals are "particular to said camera head" and therefore must come from the camera head.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims **34-40** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The Examiner cannot find support in the specification for the claimed limitation, in claim **34**, of "an imager, for generating a digital image signal[.]" In fact, the only type of image signal that the specification discloses the imager generating is an analog image signal (see, for example, [0030] line 5). For the sake of completeness the Examiner will interpret the limitation as an imager with an analog to digital converter for generating a digital image signal.

Claim Rejections - 35 USC § 102

7. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

8. Claims **15, 18, 19, 21** and **22** are rejected under 35 U.S.C. 102(e) as being anticipated by US 6,046,769 (Ikeda et al.).

As to claim **15**, Ikeda et al. teaches a video imaging system (100 and 140, see Fig. 1) comprising: a camera control unit 140 for processing an image signal (CCD OUT); a cable SL, connected to said camera control unit 140, for transmitting the image signal to said camera control unit 140; and a camera head 100, connected to said cable SL, for providing the image signal, said camera head including: an imager 103, for

generating the image signal; and a timing generator 108, generating a timing signal particular to said camera head, the timing signal actuating said imager and sent to said camera control unit (see Fig. 1 and note that MCLK is sent from 108 to 140); said camera control unit 140 programmed based at least in part upon said timing signal particular to said camera head (Column 9 line 66 to Column 10 line 2); wherein a plurality of camera heads, each with different timing signals, are attachable to said camera control unit (see the last 4 lines of the abstract).

Note that although Ikeda et al. does not specifically teach the camera heads would have a timing particular to the camera head it is inherent that if cameras with different numbers of pixels are used as is taught by Ikeda et al. (see Column 9 line 66 to Column 10 line 2) then the timing would necessarily have to be different as in order to maintain a standard frame rate between the different camera heads with the different numbers of pixels the timing would necessarily have to be different. For example, if one camera head has twice the pixels of another camera head the signals would need to be read at twice the speed in order to read them out at the same frame rate.

As to claim **18**, see the rejection of claim **15** and note that Ikeda et al. further teaches the video imaging system according to claim **15** wherein said camera head 100 further comprises a serializer, for serializing the image signal (note that although a serializer is not shown the image signal must necessarily be serialized as the cable is described as a "serial communication line," see Column 7 lines 46-47, and the entirety of the image data can not be sent at once over a single line and therefore there must be

a serializer for serializing the image signal).

As to claim **19**, see the rejection of claim **15** and note that Ikeda et al. further teaches the video imaging system according to claim **15** wherein said camera head 100 further comprises a processor 110.

As to claims **21** and **22**, see the objection to the claims above.

9. Claims **34** and **36** are rejected under 35 U.S.C. 102(e) as being anticipated by US 6,870,566 (Koide et al.).

As to claim **34**, Koide et al. teaches a video imaging system (11 and 12, see Fig. 1) comprising: a camera control unit 12 for processing a digital image signal; a cable, connected to said camera control unit, for transmitting the digital image signal to said camera control unit (although it is not shown there must be a connection between 11 and 12); and a camera head 11, connected to said cable, for providing the digital image signal, said camera head including: an imager 102, for generating a digital image signal (CCD 102 generates an analog image that is converted to digital by a converter 103); and a serializer 105, for serializing the digital image signal for transmission over said cable.

Note that the above rejection was made in light of the rejection of the claim under 35 USC 112 first paragraph.

As to claim **36**, see the rejection of claim **34** and note that Koide et al. further teaches the video imaging device of claim **34** wherein said camera head 11 comprises a processor 104.

Claim Rejections - 35 USC § 103

10. Claims **1, 3, 5, 6** and **16** rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,046,769 (Ikeda et al.) in view of US 6,870,566 (Koide et al.).

As to claim **1**, Ikeda et al. teaches a video imaging system (100 and 140, see fig. 1) comprising: a camera control unit 140 for processing an image signal; a cable SL, connected to said camera control unit 140, for transmitting the image signal to said camera control unit 140; and a camera head 100, connected to said cable SL, for providing the image signal, said camera head 100 including: an imager 103, for generating an analog image signal; a timing generator 108, generating a timing particular to said camera head, the timing signal actuating said imager and sent to said camera control unit 140 (see Fig. 1 and note that VD, HD and MCLK are all sent to the controller 140); and a serializer (note that although a serializer is not shown the image signal must necessarily be serialized as the cable is described as a “serial communication line,” see Column 7 lines 46-47, and the entirety of the image data can not be sent at once over a single line and therefore there must be a serializer for serializing the image signal), for serializing the image signal for transmission over said

cable; said camera control unit programmed at least in part upon said timing signal particular to said camera head (see Column 9 line 64 to Column 10 line 2, and note that Ikeda et al. teaches that various camera heads may be used that have different numbers of pixels, it is inherent that if cameras have different numbers of pixels but output video at the same frame rate, typically 30 frames per second, they must use different timings to read out the pixel data).

Ikeda et al. does not teach that the camera head includes an A/D converter in the camera head 100, instead the image signal is converted when it reaches the CCU 140 by A/D 151. However, Koide et al. teaches a video imaging system (11 and 12, see Fig. 1) that converts the image signal from analog to digital before transmitting it from the camera head 11 to the camera control unit 12. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have moved A/D 151 from the CCU 140 to the camera head 100 as the image signal would be converted to a digital signal before being transmitted and this would reduce the effects of noise on the image signal as digital signals are more resistant to noise than analog signals.

As to claim 3, see the rejection of claim 1 and note that Ikeda et al. further teaches that the camera head further comprises a processor 110.

As to claims 5 and 6, see the objection to the claims above.

As to claim 16, see the rejection of claim 15 and note that as discussed above

Ikeda et al. does not teach the camera head 100 comprising a converter for converting an analog image signal to a digital image signal. However, as discussed above Koide et al. teaches a video imaging system (11 and 12, see Fig. 1) that converts the image signal from analog to digital before transmitting it from the camera head 11 to the camera control unit 12. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have moved A/D 151 from the CCU 140 to the camera head 100 as the image signal would be converted to a digital signal before being transmitted and this would reduce the effects of noise on the image signal as digital signals are more resistant to noise than analog signals.

11. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,046,769 (Ikeda et al.) in view of US 6,870,566 (Koide et al.) further in view of US 6,573,931 (Horii et al.).

As to claim 2, see the rejection of claim 1 and note that what neither Ikeda et al. nor Koide et al. teaches is a multiplexer contained in a camera head which transmits a multiplexed signal including image data and control data. However, Horii et al. teaches a camera head 150 containing a multiplexer 115 for transmitting a multiplexed signal containing image data and control data (Column 2 lines 1-5).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have added the multiplexer taught by Horii et al. to the video imaging system taught by Ikeda et al. in view of Koide et al. as this would allow for using

less wires and would allow for a smaller cable.

12. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,046,769 (Ikeda et al.) in view of US 6,870,566 (Koide et al.) as applied to claim 1 and claim 3 further in view of US 6,638,212 (Oshima).

As to claim 4, see the rejection of claim 3 and note that what Ikeda et al. and Koide et al. teach has been discussed above. What neither Ikeda et al. nor Koide et al. teach is a memory device contained in the camera head and accessible by the processor containing camera head information. However, Oshima teaches an endoscope having a nonvolatile memory 20, contained in the camera head 2 and accessible by processor 21, containing camera head information (Column 6 lines 60-63). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have added a nonvolatile memory containing camera head information as taught by Oshima to the camera head taught by ~~Ikeda et al.~~^{Ikeda} in view of Koide et al. as this would allow the camera head to store such information as the make and model as well as how many times it has been used and who used it.

13. Claims 7-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,449,007 (Ikeda et al.) in view of US 6,870,566 (Koide et al.) as applied to claim 1 further in view of US 6,836,290 (Chung et al.).

As to claim 7, see the rejection of claim 1 and note that Ikeda et al. and Koide et al. have been discussed above. What neither teaches is using digital serial drivers to

transmit data from a camera head to a camera control unit. However, Chung et al. teaches an imager utilizing at least one digital serial driver 54 (Column 2 lines 28-36).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the digital serial driver taught by Chung et al. to transmit signals in the system taught by Ikeda et al. in view of Koide et al. as this is a low power system that allows for the use of differential signals that are resistant to EMI noise.

As to claim 8, see the rejection of claim 1 and note that note that Ikeda et al. and Koide et al. have been discussed above. What neither teaches is using digital serial receivers to receive data from a camera control unit at a camera head. However, Chung et al. would have considered using a receiver 56 in a camera head if two way communication between the camera head and camera control unit was desired instead of one way communication between an imager and an image processor.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a receiver as taught by Chung et al. in the camera head as taught by Ikeda et al. in view of Koide et al. as this would provide a lower power and noise resistant form of communication.

As to claim 9, see the rejection of claim 7 and note that Chung et al. further teaches the driver 54 utilizing Low-Voltage Differential Signals (LVDS) (Column 2 lines 27-37).

As to claim **10**, see the rejection of claim **8** and note that Chung et al. teaches the receiver 56 utilizing LVDS (Column 2 lines 27-37).

As to claim **11**, see the rejection of claim **1** and note that Ikeda et al. and Koide et al. have been discussed above. What neither teaches is using a digital serial driver in the camera control unit. However, Chung et al. teaches using digital serial drivers and receivers to communicate between an imager and an image processor. If two-way communication were desired, Chung et al. would have considered using digital serial drivers to communicate both ways. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the digital serial drivers taught by Chung et al. to perform communication between the camera control unit of Ikeda et al. in view of Koide et al. as it is a low power noise resistant form of communication. This would include both communication from the camera head to the camera control unit and from the camera control unit to the camera head.

As to claim **12**, see the rejection of claim **1** and note that Chung et al. teaches an image processor with at least one digital serial receiver for receiving signals from an imager (Fig. 4 and Column 2 lines 27-37). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a receiver similar to that taught by Chung et al. in the system taught by Ikeda et al. in view of Koide et al. as it is a low power communication method that is resistant to noise from

EMI.

As to claim **13**, see the rejection of claim **11** and note that Chung et al. further teaches digital serial drivers utilizing LVDS.

As to claim **14**, see the rejection of claim **12** and note that Chung et al. further teaches digital serial receivers utilizing LVDS.

14. Claim **17** is rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,046,769 (Ikeda et al.) in view of US 6,573,931 (Horii et al.).

As to claim **17**, see the rejection of claim **15** and note that what Ikeda et al. does not teach is a multiplexer for generating a multiplexed signal including an image signal and a control signal. As discussed above in the rejection of claim **2**, Horii et al. teaches a multiplexer for creating a multiplexed signal containing image data and control data. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the multiplexer taught by Horii et al. into the system taught by ^{Ikeda} ~~Ikeda et al.~~ as this would allow the cable to be thinner as only one line would need to pass through it.

15. Claim **20** is rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,046,769 (Ikeda et al.) in view of US 6,638,212 (Oshima).

As to claim **20**, see the rejection of claim **19** and note that what Ikeda et al.

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teaches has been discussed above. What Ikeda et al. does not teach is a memory device contained in the camera head and accessible by the processor containing camera head information. However, Oshima teaches an endoscope having a nonvolatile memory 20, contained in the camera head 2 and accessible by processor 21, containing camera head information (Column 6 lines 60-63). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have added a nonvolatile memory containing camera head information as taught by Oshima to the camera head taught by ~~Ikeda et al.~~ ^{Ikeda} ~~Yoshizawa~~ ^{in view of Ikeda} et al. as this would allow the camera head to store such information as the make and model as well as how many times it has been used and who used it.

16. Claims **23** and **24** are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,046,769 (Ikeda et al.) in view of US 6,836,290 (Chung et al.).

Ikeda et al. does not teach using serial drivers and receivers utilizing LVDS as the means for transmitting signals. However, Chung et al. teaches sending signals with a digital serial driver 54 on an imager 50 to a digital serial receiver 56 in an image processor 52 using LVDS. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used digital serial drivers and receivers utilizing LVDS to transmit signals from the camera head to the CCU as LVDS is resistant to EMI and is a low power method of sending signals.

17. Claims **25**, **27** and **28** are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,449,007 (Yokoyama) in view of US 6,870,566 (Koide et al.).

As to claim **25**, Yokoyama teaches a video imaging system comprising: a camera control unit 10 for processing a digital image signal; a cable 8, connected to said camera control unit 10, for transmitting the digital image signal to said camera control unit 10; and a camera head 9, connected to said cable 8, for providing the digital image signal, said camera head 9 including: an imager 61, for generating an analog image signal (Column 4 lines 23-35).

What Yokoyama does not teach is the camera head including a converter for converting the analog signal into a digital image signal. However, as discussed above in the rejection of claim **1** Koide et al. teaches an analog to digital converter 103 in an image sensing unit 11 that converts the image data to digital image data before it is transmitted to a computer 12. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have moved the analog to digital converter of Yokoyama from the CCU 10 to the camera head 9 as taught by Koide et al. as converting the image data from analog to digital before transmission makes the signal more resistant to noise as digital signals are more resistant to noise than are analog signals.

As to claim **27**, see the rejection of claim **25** and note that Yokoyama further teaches a serializer, for serializing the digital image data.

Note that the serializer is not shown explicitly but is taught implicitly as the image

data from the CCD imager 61 is brought out of the camera head 9 in a timewise manner over a single line (Column 3 lines 1-3). Therefore the circuitry that is used in the camera head must perform the function of a serializer.

As to claim **28**, see the rejection of claim **25**, and note that Yokoyama further teaches the video imaging system according to claim **25** wherein said camera head 9 further comprises a processor 1 (Column 4 lines 36-37).

18. Claim **26** is rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,449,007 (Yokoyama) in view of US 6,870,566 (Koide et al.) as applied to claim **25** further in view of US 6,573,931 (Horii et al.).

As to claim **26**, see the rejection of claim **25** and note that what neither Yokoyama nor Koide et al. teach is a multiplexer for generating a multiplexed signal, which includes a digital image signal and control signals. However, as discussed in the rejection of claim **2** above, Horii et al. teaches a camera head 150 with a multiplexer 115 for transmitting a multiplexed signal containing image data and control data (Column 2 lines 1-5).

19. Claims **29-31** are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,449,007 (Yokoyama) in view of US 6,870,566 (Koide et al.) as applied to claim **25** and claim **28** further in view of US 6,638,212 (Oshima).

As to claim **29**, see the rejection of claim **28** and note that what neither

Yokoyama nor Koide et al. teach is the camera head including a memory device, accessible by the processor, containing camera head information. However, as discussed in the rejection of claim **4**, Oshima teaches a memory **20** storing camera head information (Column 6 lines 60-63). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have added the memory of Oshima to the system taught by Yokoyama in view of Koide et al. as this would allow the camera head to store such information as the make and model as well as how many times it has been used and who used it.

As to claims **30**, see the rejection of claim **25** and note that what neither Yokoyama nor Koide et al. teaches is formatting the camera control unit with inputted data. However, Oshima teaches formatting the way that the camera control unit reads the data according to inputted data (Column 29 lines 16-25). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have added the function of changing the camera control unit settings according to inputted data as taught by Oshima to the video imaging apparatus taught by Yokoyama in view of Koide et al. as this would allow an endoscope to be quickly formatted to read data from a camera head correctly without trial and error.

As to claim **31**, see the rejection of claim **30** and note that that Oshima further teaches the inputted data coming from the camera head (Column 29 lines 16-25).

20. Claims **32-33** are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,449,007 (Yokoyama) in view of US 6,870,566 (Koide et al.) as applied to claim **25** further in view of US 6,836,290 (Chung et al.).

What Yokoyama and Koide et al. teach has been discussed above. What they don't teach is digital serial receivers and drivers using LVDS as the means for communicating between the camera head and the CCU. However, as discussed in the rejection of claims **7-14** above, Chung et al. teaches using digital serial drivers and receivers utilizing LVDS to communicate between an imager and an image processor (Column 2 lines 27-37).

21. Claim **35** is rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,870,566 (Koide et al.) in view of US 6,573,931 (Horii et al.).

As to claims **35**, see the rejection of claims **34** and note that what Koide et al. does not teach is a multiplexer contained in a camera head which transmits a multiplexed signal including image data and control data. However, Horii et al. teaches a camera head 150 containing a multiplexer 115 for transmitting a multiplexed signal containing image data and control data (Column 2 lines 1-5).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have added the multiplexer taught by Horii et al. to the video imaging system taught by ~~Horii et al.~~ **in view of** Koide et al. as this would allow for using less wires and would allow for a smaller cable.

22. Claim **37-39** are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,870,566 (Koide et al.) in view of US 6,638,212 (Oshima).

As to claim **37**, see the rejections of claim **36** and note that what Koide et al. does not teach is a memory device, accessible by said processor, containing camera head information. However, Oshima teaches a non-volatile memory 20 contained in camera head 2 and accessible by processor 21 containing camera head information (Column 6 lines 60-63).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have added a memory containing camera head information to the camera head taught by ~~Oshima~~^{Koide}, as this would allow the make, model, number of times used and other such information to be easily accessed by a CCU which would allow the settings to be automatically set for the specific head being used.

As to claim **38**, see the rejection of claim **34** and note that what Koide et al. does not teach an inputting data to format the camera control unit. However, Oshima teaches formatting a CCU according to data inputted from a camera head (Column 29 lines 16-25). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have formatted a CCU using data inputted from an outside source such as a camera head as this would allow the settings to optimized for the camera head being used and would eliminate the need for a user to input all of the settings every time a different camera head is used which would save time.

As to claim **39**, see the rejection of claim **38** and note that Oshima teaches the inputted data coming from the camera head (Column 29 lines 16-25).

23. Claims **40** and **41** are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,870,566 (Koide et al.) in view of US 6,836,290 (Chung et al.).

Koide et al. does not teach using serial drivers and receivers utilizing LVDS as the means for transmitting signals. However, Chung et al. teaches sending signals with a digital serial driver 54 on an imager 50 to a digital serial receiver 56 in an image processor 52 using LVDS. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used digital serial drivers and receivers utilizing LVDS to transmit signals from the camera head to the CCU as LVDS is resistant to EMI and is a low power method of sending signals.

Conclusion

24. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dillon Durnford-Geszvain whose telephone number is (571) 272-2829. The examiner can normally be reached on Monday through Friday 8 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ngoc-Yen Vu can be reached on (571) 272-7320. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dillon Durnford-Geszvain

3/29/2006


NGOC-YEN VU
SUPERVISORY PATENT EXAMINER